

REMARKS

The Examiner is thanked for the thorough review and consideration of the pending application. The Non-Final Office Action dated December 24, 2008, has been received and its contents carefully reviewed.

Summary of the Office Action

In the Office Action, claims 1, 11, 14, 17, 18 and 20~22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 2000-315414 to Nagahama (hereinafter "Nagahama") in view of United States Patent No. 6,295,105 to Lee et al. (hereinafter "Lee et al.") further in view of Japanese Patent No. 2001-338512 to Shiotani (hereinafter "Shiotani").

Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama, Lee et al. and Shiotani in view of United States Patent Publication No. 2003/0223020 to Lee (hereinafter "Lee").

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama, Lee et al., Shiotani and Lee in view of United States Patent No. 4,958,911 to Beiswenger (hereinafter "Beiswenger").

Claims 6~7 and 12~13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama, Lee et al. and Shiotani in view of United States Patent Publication No. 2003/0053008 to Nakano (hereinafter "Nakano").

Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama, Lee et al. and Shiotani in view of Beiswenger.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama, Lee et al. and Shiotani in view of United States Patent No. 6,064,455 to Kim (hereinafter "Kim").

Summary of the Response to the Office Action

With this response, claims 1, 11 and 18 have been amended. No new matter has been added.

Accordingly, claims 1, 2, 4~9, 11~15 and 17~23 are currently pending in this application.

All Claims Define Allowable Subject Matter

Claims 1, 11, 14, 17, 18 and 20~22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama in view of Lee et al., and further in view of Shiotani. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama, Lee et al. and Shiotani, in view of Lee. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama, Lee et al., Shiotani and Lee in view of Beiswenger. Claims 6-7 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama, Lee et al. and Shiotani in view of Nakano. Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama, Lee et al. and Shiotani, in view of Beiswenger. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama, Lee et al. and Shiotani, in view of Kim.

Reconsideration of the pending claims are respectfully requested.

As an initial matter, an object of the present invention is to provide a liquid crystal display device that prevent light leakage in a simple manner without complicating or increasing the fabrication process by substituting a lamp cover enclosing a lamp with a reflection sheet, overlapping the reflection sheet with a light guide plate, and making a bottom cover support the reflection sheet.

Claim 1 is allowable at least in that this claim recites a combination of elements, including, for example, “a backlight unit having a light guide plate, a fluorescent lamp, a reflection sheet substantially enclosing the fluorescent lamp to reflect light emitted from the fluorescent lamp, and a bottom cover having an end portion with a shape that substantially follows a contour of the reflection sheet to substantially surround and encase the reflection sheet and to support and affix the reflection sheet, the reflection sheet enclosing an outer side of the florescent lamp except for a light exit portion of the fluorescent lamp and overlapping a portion of the light guide plate” and “at least one optical sheet positioned along an upper surface of the light guide plate, wherein an end portion of the optical sheet is positioned on an end portion of the reflection sheet and wherein the end portion of the bottom cover is positioned to leave a predetermined interval from the light guide plate and the optical sheet to simplify assembly of the light guide plate and the predetermined interval is within a range of about 0.1mm to about 50mm”. The cited references do not teach or suggest at least these features of the claimed invention.

In rejecting claim 1, the Examiner acknowledges that Nagahama does not specifically discloses at least one optical sheet positioned along an upper surface of the light guide plate and

a chassis for supporting and affixing the liquid crystal display panel and the backlight unit and that the bottom cover is positioned to leave a predetermined interval from the light guide plate to simplify of the light guide plate and the predetermined interval is within a range of about 0.1mm to about 50mm. See Office Action, lines 19~231 page 3. The Examiner acknowledges that Lee et al. discloses in Figure 9 of placing at least one optical sheet (element 116) positioned along an upper surface of the light guide plate, wherein an end portion of the optical sheet is positioned on an end portion of the reflection sheet (element 124) and further a chassis (element 130) for supporting and affixing the liquid crystal display panel and the backlight unit and Shiotani disclose in Figures 3 and 4 a bottom cover (element 3) positioned with a predetermined interval (element C) from the light guide plate (element 5) and the predetermined interval is 0.1mm, which is within the range of 0.1mm to 50mm (paragraph 0040). See Office Action, lines 1-8 page 4.

As motivation for curing the deficiency of Nagahama with Lee et al. and Shiotani, the Examiner states, "It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Nagahama wherein the display device further comprises optical sheets and a chassis as taught by Lee et al., since by employing the optical sheets help to improve light distribution thus providing uniform illumination of the display and the chassis helps to attach the liquid crystal display to the backlight unit and wherein the bottom cover is positioned 0.1mm from the light guide plate as taught by Shiotani, since Shiotani teach that such configuration of the bottom cover and the light guide plate helps to reduce the amount of light leakage through the gap (abstract).

Applicant respectfully disagrees that Lee et al. and Shiotani cure the deficiency of Nagahama, since Lee et al. and Shiotani fail to teach “a backlight unit having a light guide plate, a fluorescent lamp, a reflection sheet substantially enclosing the fluorescent lamp to reflect light emitted from the fluorescent lamp, and a bottom cover having an end portion with a shape that substantially follows a contour of the reflection sheet to substantially surround and encase the reflection sheet and to support and affix the reflection sheet, the reflection sheet enclosing an outer side of the fluorescent lamp except for a light exit portion of the fluorescent lamp and overlapping a portion of the light guide plate” and “at least one optical sheet positioned along an upper surface of the light guide plate, wherein an end portion of the optical sheet is positioned on an end portion of the reflection sheet and wherein the end portion of the bottom cover is positioned to leave a predetermined interval from the light guide plate and the optical sheet to simplify assembly of the light guide plate and the predetermined interval is within a range of about 0.1mm to about 50mm”.

Accordingly, Applicant respectfully submits that claim 1 is allowable over Nagahama in view of Lee et al. further in view of Shiotani. Applicant respectfully traverses the rejection of claims 2 and 4-9 and reconsideration is respectfully requested. Claims 2 and 4-9 are allowable at least by virtue of the fact that they depend from claim 1, which is allowable.

Similarly, claim 11 is allowable at least in that this claim recites a combination of elements, including, for example, “a lamp assembly at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp and a reflection sheet at an outer side of fluorescent lamp”, “at least one optical sheet over the light projection plane of the light guide

plate, wherein an end portion of the optical sheet is positioned on an end portion of the reflection sheet” and “a bottom cover extending from a rear side of the reflection plate to an outer side of the reflection sheet such that an end portion of the bottom cover extends to the outer side of the reflection sheet substantially following a contour of the reflection sheet to substantially surround and encase the reflection sheet and to support and affix the reflection sheet, the reflection sheet enclosing an outer side of the florescent lamp except for a light exit portion of the fluorescent lamp and overlapping a portion of the light guide plate, wherein the end portion of the bottom cover is positioned to leave a predetermined interval from the light guide plate and the optical sheet to simplify assembly of the light guide plate and the predetermined interval is within a range of about 0.1mm to about 50mm”. The cited references do not teach or suggest at least these features of the claimed invention.

As stated above, Applicant respectfully disagrees that Lee et al. and Shiotani cure the deficiency of Nagahama, since Lee et al. and Shiotani fail to teach these technical features of claim 11.

Accordingly, Applicant respectfully submits that claim 11 is allowable over Nagahama in view of Lee et al. further in view of Shiotani. Applicant respectfully traverses the rejection of claims 12-15 and 17 and reconsideration is respectfully requested. Claims 12-15 and 17 are allowable at least by virtue of the fact that they depend from claim 11, which is allowable.

Moreover, claim 18 is allowable at least in that this claim recites a combination of elements, including, for example, “a reflection sheet substantially enclosing the fluorescent lamp along the outer periphery of the light guide plate to reflect light from the fluorescent lamp to the

light guide plate”, “at least one optical sheet positioned along an upper surface of the light guide plate, wherein an end portion of the optical sheet is positioned on an end portion of the reflection sheet” and “a bottom cover along a rear side of the reflection plate having an end portion with a shape that substantially follows a contour of the reflection sheet to substantially surround and encase the reflection sheet and to support and affix the reflection sheet, the reflection sheet enclosing an outer side of the florescent lamp except for a light exit portion of the fluorescent lamp and overlapping a portion of the light guide plate, wherein the end portion of the bottom cover is positioned to leave a predetermined interval from the light guide plate and the optical sheet to simplify assembly of the light guide plate and the predetermined interval is within a range of about 0.1mm to about 50mm”. The cited references do not teach or suggest at least these features of the claimed invention.

As stated above, Applicant respectfully disagrees that Lee et al. and Shiotani cure the deficiency of Nagahama, since Lee et al. and Shiotani fail to teach these technical features of claim 18.

Accordingly, Applicant respectfully submits that claim 18 is allowable over Nagahama in view of Lee et al. further in view of Shiotani. Applicant respectfully traverses the rejection of claims 19-23 and reconsideration is respectfully requested. Claims 19-23 are allowable at least by virtue of the fact that they depend from claim 18, which is allowable.

Applicant believes the foregoing amendments and remarks place the application in condition for allowance and early, favorable action is respectfully solicited.

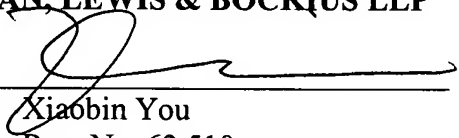
CONCLUSION

In view of the foregoing, Applicant respectfully requests reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the Applicant's undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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Dated: March 24, 2009

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